

moderately thickened; tegmina extending beyond the abdominal apex, subhyaline, apical areas six, antepical cells four.

Type, *A. bipunctatus*, Fabr.

This genus is allied to *Kanada*, Dist., which at present contains one species from Bengal, and belongs to my division Gargararia. The type is in the Banksian Collection contained in the British Museum, and is here figured. The species has been hitherto ascribed to the genus *Sextius*. Stål, in his 'Hemiptera Fabriciana,' had evidently not seen it when he placed it in *Sextius*. Kirkaldy (Rep. Haw. Plant. Assoc. 1906, p. 376) records the species in error, for he writes "the lateral horns turned a little forwards." Goding remarks that he had not seen the species, but doubted if it was distinct from *Sextius virescens*, Fairm.

Anzac bipunctatus.

Membracis 2-punctata, Fabr. Syst. Ent. p. 677 (1775); Spec. Ins. ii. p. 318 (1781); Mant. Ins. ii. p. 265 (1787).

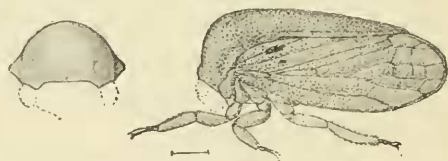
Centrotus 2-punctatus, Fabr. Syst. Rhynch. ii. p. 19 (1803).

Sextius bipunctatus, Stål, Hem. Fabr. ii. p. 52 (1869); Goding, Proc. Linn. Soc. N.S.W. xxviii. p. 12 (1903).

Body, tegmina, and legs pale tawny brown; tegmina with two black spots near base.

Long. 5 mm.; exp. pronot. angl. 2 mm.

Hab. Australia (Banksian Collection).



Anzac bipunctatus, Fabr.

III.—*Descriptions and Records of Bees.*—LXXIII.

By T. D. A. COCKERELL, University of Colorado.

NOTOCOLLETES, gen. nov. (Colletidæ.)

Closely related to *Goniocolletes*, Kll., but with only two submarginal cells.

Male.—Colletiform, hairy; tongue deeply emarginate; blades of maxillæ broad, short, and rounded, with a peculiar

roughened (microscopically cancellate) surface; maxillary palpi long, with six subequal joints; flagellum very long and slender; stigma long and narrow, obtuse at apex. Wings hairy; marginal cell ending rather obtusely, a little away from costa, with a very minute appendiculation; costa above marginal cell with a conspicuous fringe of dusky hair; second s.m. very long, receiving first r. n. far from base (distance a little greater than length of first t.-c.); second r. n. meeting second (morphologically third) t.-c.; b. n. arched, falling just short of t.m., which is not very oblique. Anterior tarsi short, the basal joint with long hair; middle femora produced beneath, subtriangular, the lower anterior face with a large basin-like depression; middle tarsi short, the basitarsus very broad, parallel-sided, truncate at end, longer than the other joints together; hind tibiæ not far from twice as long, and much more than twice as bulky as anterior or middle ones, with very long hair in front and behind; hind basitarsi broad at extreme base, with a spine, the outer side of which bears long hair, but on the posterior side, away from the spine, prolonged into a long curved extremely slender structure, ending in a flattened lamina, and longer than the other four joints together; pulvilli large; claws bifid at end. Abdomen with hind margin of fifth ventral segment elevated and greatly thickened in middle; sixth ventral segment with a great thickened elevation, which has a sloping smooth triangular anterior face.

Notocolletes heterodoxus, sp. n.

♂.—Nearly 11 mm. long.

Head, thorax, and abdomen with long erect very pale ochreous-tinted hair, not forming bands on abdomen; head and thorax black, abdomen dark dull blue-green; malar space obsolete; mandibles bidentate, black; face densely covered with appressed hair, which shines like a plate of polished silver in certain lights; scape black, flagellum obscure reddish; front flattened, entirely dull; mesothorax entirely dull, impunctate; scutellum shining, its hair strongly brownish; area of metathorax dull, without plicæ, but its margin plicatulate; legs black, the anterior and middle tibiæ mainly red in front, and the tarsi partly ferruginous; tegulæ black, rather small. Wings reddened, stigma dark reddish, nervures fuscous. Abdomen rather elongate.

Hab. "Gawter, D. S. Austr." [Gawler Range?] (British Museum, from F. Smith's collection).

An extraordinary bee, related to the species of *Gonicolletes*.

Paracolletes abnormis, sp. n.

♂.—Length about 6 mm.

Rather slender; black, with dull white hair, the face and front densely covered with long shining white hair, completely hiding the surface up to level of anterior ocellus; the hair on front is abruptly limited above, and the portion of the vertex carrying the large ocelli is flattened and depressed, so as to appear part of the front, forming a basin bounded above by a shining rim on each side, the vertex forming the upper margin of the head narrow (antero-posteriorly) and rounded; cheeks small; mandibles with a dark red mark in middle; scape black; flagellum pale ferruginous beneath (including apical joint), dusky red above; mesothorax shining, with sparse small punctures; area of metathorax semilunar, with very indistinct rugæ; legs black, with the knees, anterior tibiæ in front, the other tibiæ at apex, and all the tarsi, clear ferruginous; tarsal joints 2 to 4 broad-triangular, giving the tarsi in this region an unusual thickened appearance; tegulæ pale testaceous. Wings hyaline, nervures and the rather large stigma; b. n. arched, the lower part nearly vertical, almost reaching t.-m., which is hardly at all oblique; only two s. m. cells, the very long second receiving the recurrent nervures near base and apex; on one side can be seen above a minute stump representing the lost second t.-c., it is halfway between the first t.-c. and the insertion of the third on the marginal cell; marginal cell long, rather obliquely truncate at apex. Abdomen shining, with extremely fine punctures, no hair-bands, but the surface thinly hairy; fifth ventral segment with a long dense fringe of white hair, longest at sides.

Hab. Alexandria, N. Australia (*W. Stalker*; British Museum).

P. abnormis is a very peculiar species, which, from having only two s. m. cells, would be associated with *P. vitrifrons* (Sm.) and *Andrenopsis flavorufus*, Ckll., but it is not closely related to either of these*.

Paracolletes nitidulus, sp. n.

♀ (Type).—Length 9.5–10 mm.

Shining black, not very robust, with thin white hair; vertex with long black hair; mesothorax and scutellum with

* Since writing the above, I find that I overlooked a second specimen of *P. abnormis* from the same locality. This has three submarginal cells in both anterior wings; the second s. m. small, receiving the first r. n. about the middle.

a little black hair scattered over the surface; face bare, with white hair at sides; abdomen with broad but thin marginal white hair-bands at sides of second and third segments, and right across on fourth; fifth segment and apex with heavy black hair, but the fifth with glittering white hair at sides; venter with broad but thin bands of glittering white hair, the last tinged with ochreous; head broad; blades of maxillæ smooth and polished; clypeus shining, with large punctures, more or less in rows; no clypeal keel, but front with a delicate keel, strongly elevated between antennæ; front dull and punctured, with the sides broadly and abruptly smooth and polished; antennæ ordinary, scape closely punctured, flagellum with apical joint more or less rufous; mesothorax shining, with fine well-separated punctures; scutellum flattened, with larger punctures; mesopleura nearly impunctate; area of metathorax triangular, with fine and indistinct cross-striæ; legs black, with pale hair, that of tarsi and outer side of tibiæ brownish; scopa on lower side of hind tibiæ long and clear white; tegulæ piceous. Wings brownish, stigma (which is large) and nervures dark brown; marginal cell rounded at end; b. n. falling just short of t.-m., which is extremely oblique; second s.m. small, narrowed above, receiving first r. n. at about end of its first third; third s.m. large and long, receiving second r. n. a considerable distance from apex. Abdomen shining, with very minute inconspicuous punctures; first segment polished, the others not entirely smooth; pygidial plate large and broad, obtuse.

♂.—Length about 8.5 mm.

Slender; face covered with shining white hair, very dense and silvery at sides; cheeks with very long white hair; frontal carina little developed; front dull, with only narrow indistinct glittering bands along orbits; antennæ slender, not very long for a male, black, flagellum obscure brown beneath; scutellum flattened on disc, sparsely punctured; mesothorax and scutellum with abundant long black hair, as also the vertex; anterior femora above and (except base) in front, and their tibiæ in front, ferruginous; abdomen without bands on apices of segments, but pale hair at extreme base of fourth; apical plate small, broadly rounded; fourth and fifth ventral segments with broad stiff hair-bands, that on fourth creamy-white, that on fifth dark fuscous, nearly black. Hind wings with a conspicuous black apical spot.

Hab. Yallingup, S.W. Australia, middle of September to November, 1913, 5 ♀, 1 ♂ (*R. E. Turner*; British Museum).

An ordinary-looking species, but entirely unique by the large black spot at end of marginal nervure of hind wing of male. In the female this is represented by a much smaller, elongated spot.

Paracolletes nigrifulus, sp. n.

♀.—Length about 7 mm.

Not very robust; shining black, with scanty white hair; black hair on vertex, and a little on thorax above; legs with white hair, dark fuscous on outer side of tibiæ and tarsi; abdomen with very scanty pale hair, not forming bands, although it is more abundant along hind margins of third and fourth segments; hair at apex of abdomen dark fuscous; venter with white hair-bands; head broad; clypeus highly polished, with large punctures; supraclypeal area almost without punctures; front shining, with scattered punctures; flagellum obscure reddish beneath; mesothorax and scutellum highly polished, with very sparse exceedingly small punctures; area of metathorax smooth, triangular, with a transverse obtuse angulation separating the apical vertical face, which is produced; legs black; tegulæ fuscous. Wings strongly brownish, the rather narrow stigma and the nervures rufo-fuscous; marginal cell truncate at end; b. n. meeting the very oblique t.-m.; second s.m. small, receiving first r. n. in middle; third s.m. receiving second r. n. some distance from end (the distance about equal to upper side of second s.m.). Abdomen shining but microscopically sculptured, without evident punctures; hind margins of segments rather obscurely pallid.

Hab. Yallingup, Nov. 1913 (*R. E. Turner*; British Museum), 2 ♀.

Readily known by the small size, dusky wings, and especially the truncate marginal cell. The clypeus is quite convex and prominent.

Paracolletes simillimus, sp. n.

♂.—Length about 10.5 mm.

Shining black, the first three abdominal segments with a faint purplish lustre in certain lights, but not properly described as metallic; hair of head and thorax quite abundant, variously coloured, as follows: long and white on face and lower part of front, but with a faint creamy tint, contrasting with the pure white of the long and very abundant hair on lower part of cheeks; vertex, most of front, mesothorax, and scutellums with thin erect dark

fuscous hair; a tuft of fuscous just below wings, but pleura and metathorax with long loose white hair; tubercles, region just behind, and adjacent corners of mesothorax with cream-coloured hair, dense and conspicuous on tubercles; legs with mainly white hair, long and spreading on hind legs; on inner side of hind basitarsi the hair appears soot-colour in some lights and silvery-white in others; abdomen without bands, but with thin erect white hair, partly black on third and fourth segments, and all black beyond; hind margin of fourth ventral segment with a broad stiff fringe of fuscous hair; face broad; eyes prominent, moderately converging below; mandibles red apically; antennæ black, not very long for a male; mesothorax and scutellum shining, sparsely punctured, the scutellum with a median groove; area of metathorax large, triangular, with obscure cross-striæ, but no transverse keel; legs ordinary, hind tarsi long; tegulæ piceous. Wings strongly brownish, with the base colourless; the nervures and lanceolate stigma dark fuscous; marginal cell obtuse at end; b. n. falling a little short of the very oblique t.-m.; first r. n. joining second s.m. very near its beginning, second r. n. joining third s.m. some distance from its end. Abdomen polished and shining, with minute piliferous punctures.

Hab. Yallingup, Nov. 1913, 2 ♂ (*R. E. Turner*; British Museum).

This looks like *P. metallescens*, Ckll., but the sculpture of abdomen is entirely different.

Paracolletes perpolitus, sp. n.

♂.—Length about 9.5 mm.

Robust for a male, with elongate-pyriform abdomen; black, the head and thorax brilliantly shining, the abdomen duller, with very fine punctures, the hind margins of the segments depressed and brown; hair of head and thorax long and quite abundant, white, but on vertex, mesothorax, and scutellum greyish-fuscous; legs with pale hair; abdomen with very little hair, and no hair-bands, apical segments with dark hair; ventral segments with thin bands of white hair, but no stiff fringe; mandibles black; clypeus broadly overlapped by hair, but the disc bare, flattened, polished, shining, almost wholly impunctate, with a low median ridge; antennæ ordinary, flagellum ferruginous apically; mesothorax and scutellum polished, with sparse punctures; area of metathorax shining, finely transversely striated, obtusely transversely ridged or angled; legs black, with last tarsal

joint ferruginous, and anterior tibiæ largely red in front; tegulæ dark brown. Wings hyaline; stigma rather small, reddish with a dark margin; nervures fuscous; b. n. almost reaching t.-m.; first r. n. joining second s.m. before middle, second r. n. joining third s.m. very near end; marginal cell rounded at end; third s.m. elongated, and very broad above. Apical plate of abdomen red, rounded, subtruncate.

Hab. Yallingup, Dec. 1-12, 1913 (*R. E. Turner*; British Museum).

Very close to *P. incanescens*, Ckll., which has the same type of clypeus, but third submarginal cell quite differently shaped, abdomen more finely punctured, and flagellum red at end.

Paracolletes minutus, sp. n.

♂.—Length a little over 6 mm.

Shining black, but head, thorax, and abdomen closely and very distinctly punctured, the hind margins of abdominal segments depressed and broadly brown; hair of head and thorax white, tinged with brown on vertex and scutellum, sides of face and lower part of front with long pure white hair; abdomen without hair-bands; head broad, but facial quadrangle much longer than broad, narrowing below; mandibles ferruginous, only the base black; clypeus flattened in middle, with large punctures; front very densely punctured; flagellum obscure brown beneath; mesothorax densely and strongly punctured, scutellum with very dense smaller punctures; area of metathorax dull and rugose; pleura strongly punctured; legs black, with white hair, anterior tibiæ reddish in front; tegulæ pellucid brown. Wings rather short, dusky hyaline; stigma lanceolate, reddish with dark margin; nervures fuscous; marginal cell narrowly rounded at end; b. n. falling just short of t.-m.; second s.m. receiving first r. n. well before middle; third s.m. broad above, receiving second r. n. a moderate distance (equal to distance of first r. n. from base of second s.m.) from apex. Abdomen, except the broad depressed apical margin of segments, densely and finely punctured, with elevated ridges at sides just before the depressions; third and fourth ventral segments with long fringes of white hair, fifth with a fringe of very short yellowish hair.

Hab. Yallingup, Nov. 1913 (*R. E. Turner*; British Museum).

Easily known from *P. punctatus* (Sm.) by the closely punctured thorax and colour of antennæ and nervures.

Paracolletes eucalypti, sp. n.

♂.—Length about 10 mm.

Head blue-green, the lower part of clypeus black; thorax dark blue, mesothorax green, with middle of disc discoloured; hair of head and thorax mostly black, but white on lower two-thirds of pleura and on cheeks; mandibles and antennæ black; abdomen rich deep purple-blue, hair at apex black. Exceedingly like *P. carinatus* (Sm.), both sexes of which were taken on the same plant at the same time, but easily distinguished by the narrower abdomen, which is transversely microscopically lineolate-punctate (making a dullish, not polished, surface), and is only extremely indistinctly punctured; the b. n. falling short of t.-m.; and the dark red tibiæ.

Hab. Mt. Yule, Healesville, Victoria, on *Eucalyptus calophylla rosea*, Feb. 20, 1915 (*R. Kelly*; British Museum).

This resembles *P. castaneipes*, Ckll., as to the legs, but has much smaller eyes and broader face. It is related to *P. subviridis*, Ckll., but the abdomen is quite differently coloured.

Paracolletes moniliformis, sp. n.

♂.—Length 9 mm.

Rather slender; head and thorax shining black; abdomen obscurely purplish on first two segments, greenish and purplish on third, and greenish on the others; hair of head and thorax long, white with a slight ochreous tint, dark fuscous on vertex, and mixed with fuscous on dorsum of thorax; face extremely broad, facial quadrangle broader than long; mandibles black, obscurely red at apex; vertex impunctate; antennæ black, the flagellar joints moniliform; mesothorax shining, only feebly punctured; area of metathorax polished, with no sharp transverse keel; legs black, with pale hair; tegulæ dark brown. Wings dusky, nervures and stigma piceous; first r. n. joining second s.m. in middle. Abdomen with a dullish, sericeous surface, no hair-bands; apical plate broad, truncate; venter with thin glittering white hair.

Hab. Yallingup, S.W. Australia, Sept. 14–Oct. 31, 1913 (*R. E. Turner*; British Museum).

Closely allied to *P. ibex*, Ckll., with similar flagellum, but larger, with brownish wings and dark stigma.

Paracolletes clypeatus, sp. n.

♂.—Length about 10 mm.

Rather robust; head and thorax shining black, abdomen dark purple; hair of head and thorax long and abundant, white on face, cheeks and occiput, black on vertex, pale grey (mouse-grey) on thorax; head broad; mandibles black, faintly reddish apically; clypeus and supraclypeal area exposed, nearly bare, flattened, longitudinally striate, and with a median keel; antennæ black, only moderately long, flagellum submoniliform; mesothorax polished, with sparse small punctures; area of metathorax transversely striate; legs black, with the last tarsal joint and patch on inner side of anterior tibiæ red; spurs bright ferruginous; tegulæ piceous. Wings very short, hyaline, faintly dusky apically; stigma and nervures fuscous; stigma very small; first r. n. joining second s.m. about middle. Abdomen without hairbands; hair at apex and on venter black.

♀.—Length about 11 mm.

Robust, with the same facial structure, the median keel going some distance up front; hind tibiæ with an enormous scopa, entirely black.

Hab. Yallingup, S.W. Australia, Nov. and Dec. 1913 (R. E. Turner; British Museum).

Entirely unique by the peculiar structure of the face. The male is the type.

Paracolletes ferricornis, sp. n.

♂.—Length a little over 11 mm.

Robust; black, with head, thorax, and abdomen abundantly clothed with long pale fulvous hair; eyes large, pea-green, inner orbits parallel; facial quadrangle much longer than broad; mandibles bidentate, black, with or without a red spot near middle; ocelli far below level of top of eyes; scape very short, black, hairy; flagellum long, entirely very bright ferruginous; third antennal joint very long, slender, shining; mesothorax shining, with small irregular punctures; scutellum closely punctured except the anterior margin, which is polished and impunctate; area of metathorax triangular, without any distinct sculpture, but with a median longitudinal pit (not always present), margin of area not beaded; legs slender but of normal structure, the basitarsi long; apices of femora broadly, and tibiæ and tarsi entirely, bright ferruginous; tegulæ ferruginous, punctured. Wings reddish hyaline, stigma and nervures ferruginous;

stigma extremely small; marginal cell long and narrow, obtuse at end; b. n. falling far short of t.-m.; second s.m. very broad, receiving first r. n. slightly beyond middle; third s.m. receiving second r. n. far from its end. Abdomen shining, finely punctured, with long hair which extends over the surface, but also forms rather distinct bands; apical plate very broad, truncate, with rounded corners.

Hab. Hermannsburg, Central Australia (*H. J. Hillier*; British Museum).

In the colour of the antennæ, &c., this is curiously parallel with *P. fimbriatinus hillieri*, Ckll., from the same locality. The species may be compared with *P. fulvus*, Sm., *P. ruficornis*, Sm., and *P. waterhousei*, Ckll., but is very distinct by the structure of the metathorax, &c.

IV.—New South-American Arctiadae.

By J. J. JOICEY, F.L.S., F.E.S., and G. TALBOT, F.E.S.

THE types of the species herein described are all in the collection of Joicey.

Our thanks are due to Sir G. F. Hampson for help in the determination of the species.

Coloured figures of all these species will be published later.

1. *Thyrractia semivitrea*, sp. n.

♂. Head, thorax, legs, and abdomen as in *cedo-nulli*, Stoll., white spot on tegulæ much smaller.

Upperside.—*Fore wing* chocolate-brown. A triangular hyaline patch at apex as in the allied species. A broad hyaline band crosses the wing and extends costally from before the base of vein 7 to middle of cell opposite vein 3, and along outer margin from vein 5 to just below termination of vein 2. This band is indented in cellules 5 and 6, and its proximal edge is straight. A thin waved dark brown submarginal line crosses the band, representing, as it were, the outer edge of a similar but much thicker line in the allied species. A pale irregular discocellular patch, the larger part of which lying outside the cell is bluish grey edged with yellowish, the part within the cell is mostly dark brown. The discocellulars are outlined with white, as is also the base of vein 5 within the discocellular patch. Costa cream-colour from apex to proximal border of hyaline band.